

## Message Text

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UNCLAS STATE 154089

E.O. 11652:N/A

TAGS: EAGR, EAID, PO

SUBJECT: ENVIRONMENTAL IMPACT STATEMENT ON SEVIN-4 OIL

REF: OKUN-FOURIER TELECON

1. FOLLOWING FOR ADDRESSEES' INFORMATION IS TEXT OF ENVIRONMENTAL IMPACT STATEMENT PREPARED BY AID AND PUBLISHED MAY 13, 1977, AS VOLUME II OF THE APPENDICES TO "ENVIRONMENTAL IMPACT STATEMENT ON THE AID PEST MANAGEMENT PROGRAM" (PP. 50-54). FOOTNOTES AND REFERENCE WORKS HAVE BEEN OMITTED. GENERIC NAME FOR SEVIN-4 OIL IS "CARBARYL".

2. QUOTE: NOMENCLATURE: COMMON NAME: CARBARYL, SEVIN (USSR). TRADE NAMES: UC 7744, DENAPON, DICARBAM, HEXAVIN, UNCLASSIFIED

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KARBASPRAY, RAVYON, NAC, SEPTENE, SEVIN, SEVIMOL, TRICARNAM. COMBINATIONS: SEVIDOL (8 PERCENT SEVIN AND 8 PERCENT GAMMA ISOMER BENZINE HEXACHLORIDE). PESTICIDE AND CHEMICAL CLASS: BROAD SPECTRUM INSECTICIDE; CARBAMATE.

3. MANUFACTURE: PRODUCERS: UNION CARBIDE CORPORATION (INSTITUTE AND SOUTH CHARLESTON, WEST VIRGINIA), BASF AKTIENGESELLSCHAFT (FEDERAL REPUBLIC OF GERMANY), MAKHTESHIM-AGAN (ISRAEL).

ESTIMATED 1974 US PRODUCTION: 26 MILLION KILOGRAMS  
(58 MILLION POUNDS).

POLLUTION AND WASTE CONTROL TECHNOLOGY: THE POLLUTION AND WASTE CONTROL TECHNOLOGY FOR CARBARYL HAS BEEN REPORTED. UNION CARBIDE MANUFACTURES CARBARYL BY A COMBINATION OF BATCH AND CONTINUOUS PROCESSES. RAW MATERIALS FOR PRODUCTION ARE MADE ON-SITE AND RECEIVED BY PIPELINE OR TANK CAR. ALL PESTICIDE-CONTAINING WASTEWATER GOES TO THE PLANT'S SECONDARY WASTE TREATMENT SYSTEM AND THEN TO A RIVER. THIS EFFLUENT CONTAINS ONLY 0.01 TO 1 PARTS PER MILLION CARBARYL. TOXIC VENTS ARE EITHER FLARED OR GO TO NAOH SCRUBBERS. NONTXIC VENTS GO TO A CONDENSER AND ARE THEN VENTED TO THE ATMOSPHERE. STANDARD HOODS ARE USED IN THE PACKAGING AREA, AND THE RECOVERED MATERIAL IS RECYCLED. THE HEAVY RESIDUE SOLID WASTES ARE BURNED. ONE SHUTDOWN FOR CLEANING IS MADE PER YEAR, BUT NUMEROUS MAINTENANCE CLEAN-UPS ARE MADE, THE WASHINGS GO TO THE PROCESS WASTE TREATMENT SYSTEM.

4. FORMULATION: TECHNICAL CARBARYL IS AVAILABLE IN THE UNITED STATES IN TWO FORMS: PELLETIZED, 99 PERCENT AI, PACKAGED IN A 50-LB BAG, AND CONCENTRATES OF 50 TO 97 PER UNCLASSIFIED

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CENT ACTIVE INGREDIENT, ALSO IN 50-LB BAGS. BOTH ARE SHIPPED BY RAIL AND TRUCK. UNION CARBIDE PROVIDES THE FOLLOWING US FORMULATIONS: SEVIN WETTABLE POWDERS OF 50 PERCENT AND 80 PERCENT; SEVIN 50 PER CENT DUST BASE; GRANULES OF 5 TO 10 PERCENT; SEVEN 80 PERCENT AND 85 PERCENT SPRAYABLES, AND 4 LB/GAL FLOWABLE SUSPENSIONS IN OIL AND MOLASSES. IT IS ALSO AVAILABLE AS BAITS.

THE HISTORICAL "AID-APPROVED" FORMULATIONS OF CARBARYL WERE: CARBARYL, TECHNICAL PREGROUND, CONTAINING A MINIMUM OF 90 PERCENT BY WEIGHT CARBARYL, AND CONSISTING OF A PARTICLE SIZE RANGE OF LESS THAN 5 MICRONS (5 PERCENT MAXIMUM), 10 TO 30 MICRONS (80 PERCENT MINIMUM), AND GREATER THAN 30 MICRONS (5 PERCENT MAXIMUM); AND CARBARYL, 85 PERCENT WETTABLE POWDER, CONTAINING A MINIMUM OF 85 PERCENT BY WEIGHT CARBARYL IN THE FORM OF A WATER-DISPENSIBLE, MICROFINE POWDER, CONSISTING OF A PARTICLE SIZE RANGE OF LESS THAN 2 MICRONS (5 PERCENT MAXIMUM), 2 TO 10 MICRONS (70 PERCENT MINIMUM), AND GREATER THAN 10 MICRONS (25 PERCENT MAXIMUM). A "CONDITIONALLY ELIGIBLE" FORMULATION OF CARBARYL WAS CARBARYL 8 PERCENT BENZINE HEXACHLORIDE 8 PERCENT GRANULAR, A DUSTLESS FREE-FLOWING GRANULAR MIXTURE CONTAINING A MINIMUM OF 8 PERCENT BY WEIGHT CARBARYL AND A MINIMUM OF 8 PERCENT BY WEIGHT OF GAMMA ISOMER BENZINE HEXACHLORIDE.

5. UNITED STATES USE PATTERNS: GENERAL: CARBARYL HAS

BEEN IN LARGE-SCALE USE IN THE UNITED STATES AND IN MANY OTHER COUNTRIES FOR MORE THAN 15 YEARS. IT IS STILL THE MOST WIDELY USED CARBAMATE INSECTICIDE IN THE UNITED STATES TODAY. IT HAS A BROAD SPECTRUM OF EFFECTIVENESS ON INSECTS, IS ONLY SLIGHTLY TOXIC TO MAMMALS, NOT PERSISTENT, AND DEGRADES RAPIDLY IN THE ENVIRONMENT AFTER APPLICATION. ITS SPECTRUM OF INSECT CONTROL OVERLAPS IN PART WITH THAT OF SOME CHLORINATED HYDROCARBON INSECTICIDES SUCH AS DDT, TOXAPHENE AND OTHERS.

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ACTION: BROAD SPECTRUM INSECTICIDE, CONTACT AND STOMACH POISON, NO SYSTEMIC ACTION. REVERSIBLE INHIBITOR OF CHOLINESTERASE.

TARGET CROPS: SOYBEANS; SWEET CORN; ORNAMENTALS AND TURF; FIELD CORN; FOREST AND SHADE TREES; COTTON, DECIDUOUS TREE FRUITS; MANY OTHER FIELD, VEGETABLE, FRUIT AND NUT CROPS; POULTRY AND PETS.

TARGET PESTS: CORN EARWORM; ARMYWORMS, GYPSY MOTH, EUROPEAN CORN BORER, CUTWORMS, CORN ROOTWORM BEETLES, PINK BOLLWORM, LEAFHOPPERS, SCALE INSECTS, MANY OTHER INSECTS. MITES, LICE, FLEAS, TICKS, BEDBUGS ON AND AROUND POULTRY AND PETS. INEFFECTIVE AGAINST MOST APHIDS, PLANT-FEEDING MITES, AND FLIES. SOME RESISTANCE OF TARGET PESTS.

APPLICATION: LARGEST VOLUME USE IS FOLIAR SPRAY (WETTABLE POWDERS MUCH MORE WIDELY USED THAN THE FLOWABLE SUSPENSION) TO AGRICULTURE CROPS, TREES, AND FORESTS BY AIR OR GROUND EQUIPMENT. MUCH SMALLER QUANTITIES OF ACTIVE INGREDIENT GO INTO BAITS, DUSTS AND GRANULES WHICH ARE ALSO APPLIED BY GROUND OR AIR EQUIPMENT. DIPS, WASHES, SPRAYS, OR DUSTS ON ANIMALS.

RATES OF APPLICATION: 1.0 TO 2.5 LB ACTIVE INGREDIENT/ ACRE FOR MOST FIELD, FORAGE AND TRUCK CROPS (LOWER OR HIGHER RATES LABELED FOR SOME USES); 1.0 LB ACTIVE INGREDIENT/100 GAL. FOR MOST FRUIT CROPS; 2.0 TO 5.0 PERCENT DUSTS OR 0.5 TO 1.0 PERCENT ACTIVE INGREDIENT DIPS OR WASHES FOR USE ON POULTRY AND PETS.

FREQUENCY: 1 TO 10 APPLICATIONS PER SEASON OR PER YEAR.

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TIME OF APPLICATION: THROUGHOUT THE GROWING SEASON ON CROPS. ON POULTRY AND PETS, THROUGHOUT THE YEAR AS REQUIRED.

6. HUMAN HEALTH EFFECTS: CARCINOGENIC EFFECTS: A

RUSSIAN PUBLICATION HAS INDICATED THAT CARBARYL HAD CARCINOGENIC EFFECTS IN RATS WHEN GIVEN EITHER (A) ORALLY FOR 95 WEEKS FOR A TOTAL OF 57,000 MG/KG OR (B) IMPLANTED AT A DOSAGE OF 80 MG/KG (7).

THE SAME ARTICLE INDICATED THAT CARBARYL HAD TERATOGENIC EFFECTS TO THE FOLLOWING LABORATORY ANIMALS: TO THE RAT WHEN DOSED ORALLY AT 50 MG/KG ON THE 9TH OR 10TH DAY OF PREGNANCY; TO THE DOG WHEN DOSED ORALLY AT 388 MG/KG; TO THE GUINEA PIG WHEN DOSED ORALLY AT 300 MG/KG. FURTHER EVIDENCE OF TERATOGENICITY TO MICE AND BEAGLE DOGS WAS OBSERVED IN ANOTHER STUDY. WHO TOXICITY CLASSIFICATION: MODERATELY HAZARDOUS. TOXIC ACTION: REVERSIBLE CHOLINESTERASE INHIBITOR.

ACUTE TOXICITY TO LABORATORY ANIMALS: ORAL - LETHAL DOSE FOR HALF POPULATION OF RATS 850 MG/KG (MALES); DERMAL - LETHAL DOSE FOR HALF POPULATION OF RATS GREATER THAN 4,000 MG/KG (MALES); INHALATION - LETHAL CONCENTRATION FOR HALF POPULATION OF GUINEA PIGS GREATER THAN 0.390 MG/LITER.

IRRITATING TO: EYES - NO; NOSE AND THROAT - NO; SKIN - NO.

OTHER HAZARDS: MAY DAMAGE TESTES, OVARIES, AND PITUITARY GLAND IN ANIMALS. MAY IMPAIR THYROID FUNCTION, OXIDATIVE ABILITY OF BRAIN, INFLAME LUNGS, AND INFLAME STOMACHS IN SOME ANIMALS. HAS BEEN SHOWN TO HAVE ADVERSE EFFECTS ON KIDNEY FUNCTION IN HUMAN VOLUNTEERS.

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SPECIFIC ANTIDOTE: ATROPINE SULFATE. DO NOT USE 2-PAM, OPIATES OR CHOLINESTERASE INHIBITING DRUGS.

CHRONIC TOXICITY: NO-EFFECT LEVEL WAS 200 PARTS PER MILLION IN THE DIET OF RATS IN A 2-YEAR STUDY; 400 PARTS PER MILLION IN THE DIET OF DOGS IN A 1-YEAR TEST.

CUMULATIVE TOXIC EFFECTS: NONE.

THRESHOLD LIMIT VALUE: 5 MG/CU M.

ALLOWABLE DAILY INTAKE (FAO/WHO): 0.01 MG/KG (TEMPORARY).

US RESIDUE TOLERANCES: 1 TO 100 PARTS PER MILLION; 5 TO 10 PARTS PER MILLION FOR MOST COMMON COMMODITIES.

PRECAUTIONS: GROUP III (SLIGHTLY TOXIC).

7. ENVIRONMENTAL EFFECTS: TOXICITY TO: FISHES - SLIGHTLY TO MODERATELY TOXIC; LOWER AQUATIC ORGANISMS - MODERATELY

TOXIC; BIRDS -MODERATELY TOXIC; WILD MAMMALS - MODERATELY TOXIC; SOIL ORGANISMS - RELATIVELY NONTOXIC TO HIGHLY TOXIC; MULLUSCS - HIGHLY TOXIC; PLANTS - MAY DAMAGE CHROMOSOMES.

BUILD-UP IN FOOD CHAINS: NO.

LIKELIHOOD OF MOVEMENT AWAY FROM TREATED FIELDS BY:  
VOLATILIZATION- INDEX 3 - 4; LEACHING - INDEX 2;  
SURFACE RUNOFF IN WATER - LOW; ON SOLIDS - LOW; WIND  
EROSION - SLIGHT.

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DEGRADATION IN THE ENVIRONMENT: CHEMICAL ROUTE - HYDROLYSIS TO NAPHTHOL, CONJUGATION TO SULFATES OR GLUCURONIDES; OXIDATION TO RING-HYDROXYLATED CARBAMATE METABOLITES.

MAJOR DEGRADATION PRODUCTS AND THEIR TOXICITY RELATIVE TO THE PARENT COMPOUND: METHYLOL CARBARYL, L-NAPHTHOL, HYDROXY CARBARYLS; ALL LESS TOXIC THAN CARBARYL.

DEGRADABLE BY: BIOLOGICAL ORGANISMS - YES; NONBIOLOGICAL FACTORS - YES; SUNLIGHT - YES, BUT SLOWLY.

OVERALL RATE OF DEGRADATION: MODERATE TO RAPID.

PERSISTENCE IN SOIL: NOT PERSISTENT, HALF LIFE IN SOIL 7 TO 10 DAYS.

CARRY-OVER TO NEXT SEASON: NONE. END QUOTE.

7. FYI: DOD ADVISES THAT THE PRODUCT FORMULATION SEVIN-4 OIL WHICH IS INTENDED FOR USE ON TERCEIRA IS EPA REGISTERED FOR AERIAL CONTROL OF JAPANESE BEETLE ADULTS.  
END FYI. CHRISTOPHER

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## Message Attributes

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**To:** LISBON INFO SECDEF MULTIPLE  
**Type:** TE  
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